### 7.0

#### 7.1 Initial Screening

# EVALUATION PHASE

Ideas generated during the Speculation Phase were not subject to any evaluation. This is done to promote free thinking. The next step was the initial screening of ideas, which was used to identify real and potential conflicts and to consider the likelihood for acceptance of each idea. In addition, ideas that violated project constraints were eliminated. The initial screening used a pass-fail technique. Ideas that passed the initial screening are indicated with a "P" for pass, and those that failed are indicated with an "F" for fail in column 1 of Exhibit 7.1, which shows the results of the initial screening process.

#### 7.2 Checkpoint Presentation

The ideas were presented to MDOT on March 4, 2004, at the Checkpoint Presentation. MDOT's responses to the ideas are listed in column 2 on Exhibit 7.1. Ideas that were acceptable to carry forward are indicated with an "A" for *accept* and those ideas that were rejected, for various reasons, are indicated with a "R" for *reject*. Exhibit 7.2 is the list of meeting attendees. At this meeting, all the ideas were presented to MDOT. At the end of the meeting, MDOT furnished the VE team the promised newsletter on this project detailing the eleven commitments MDOT made to the City of Detroit (Exhibit 7.3).

Based on Friday's comments, the list of ideas was further screened. The list of ideas accepted by MDOT is presented in Exhibit 7.4. Exhibit 7.5 is the meeting minutes of the Checkpoint Presentation.

### 7.3 Rating

The team further rated all the accepted ideas. Each idea was given a rating on a scale of 1 to 10, with 10 being the highest rating. Ideas that are considerations for the original designer are indicated as "DC" for *design consideration*. These are shown in column 3 of Exhibit 7.1

## Screening

| Crea | tivity Phase Composite Summary-Speculation  | ng                   | ses               |        |
|------|---|----------------------|-------------------|--------|
| Idea |   | al<br>eni            | Fog               | ng     |
| No.  | Description   | Initial<br>Screening | MDOT<br>Responses | Rating |
| 1.   | Use alternative types of retaining yealle to minimize exceptation.                | P                    | A                 | DC     |
| 1.   | Use alternative types of retaining walls to minimize excavation:  (a) Secant pile | 1                    | $\Lambda$         |        |
|      | (b) Tied-back steel sheeting  |                      |                   |        |
|      | (c) Helical anchor tied back  |                      |                   |        |
|      | (d) Soldier pile and lagging  |                      |                   |        |
|      | (e) MSE in fill sections  |                      |                   |        |
|      | (f) Vertical face, cast-in-place concrete   |                      |                   |        |
|      | (g) Crib walls  |                      |                   |        |
|      | (h) Slope paving, say 1:1   |                      |                   |        |
| 2.   | Use retaining walls instead of grading to save right of way.                      | P                    | A                 | DC     |
| 3.   | Use slopes instead of retaining walls where right of way is available.            | P                    | A                 | DC     |
| 4.   | Eliminate 8 ft. shoulder on 2- or 3-lane service drives, throughout project.      | P                    | A                 | DC     |
| 5.   | Eliminate 8 ft. shoulder on service drives through interchange areas.             | F                    |                   |        |
| 6.   | Eliminate 8 ft. shoulder on service drives, and build bus turnouts.               | P                    | R                 |        |
| 7.   | Eliminate/terminate service drives through two system interchanges.               | P                    | R                 |        |
| 8.   | Construct one service drive carrying two-way traffic, for entire project.         | F                    |                   |        |
| 9.   | Build 24 ft. service drive (16'+8'), single lane, west of M-10 and at east end    |                      |                   |        |
|      | of project.   | P                    | R                 |        |
| 10.  | Eliminate/terminate north-south service drives through M-10 and                   |                      |                   |        |
|      | I-75 Interchanges.  | P                    | R                 |        |
| 11.  | Use Harper as a westbound service drive west of I-75.                             | P                    | R                 |        |
| 12.  | Purchase right of way for entire footprint, but build frontage roads as           |                      |                   |        |
|      | demand requires.  | F                    |                   |        |
| 13.  | Use Harper as a westbound service drive at east end of project.                   | P                    | R                 |        |
| 14.  | Connect Harper to service drive west of Frontenac.                                | P                    | A                 | 7      |
| 15.  | Eliminate service drive in northeast quadrant of I-75 Interchange, by using       |                      |                   |        |
|      | East Grand Blvd. and Milwaukee.   | P                    | R                 |        |
| 16.  | Use a service road "perimeter system" at the two system interchanges.             | P                    | A                 | 9      |
| 17.  | Near GM, integrate East Grand Blvd. into service drive.                           | P                    | A                 | 5      |
| 18.  | Shift eastbound service drive alignment at Mt. Elliott to parallel mainline.      | P                    | A                 | 8      |
| 19.  | In northeast quadrant of I-75 Interchange, relocate service drive to former       | _                    | _                 |        |
|      | railroad corridor.  | P                    | R                 |        |
|      | railroad corridor.  | P                    | R                 |        |

P = Pass F = Fail A = Accepted R = Rejected R = Rejected

Exhibit 7.1 Page 1 of 5

## Screening (continued)

| Crea | ativity Phase Composite Summary-Speculation                                     | Initial<br>Screening | MDOT<br>Responses |        |
|------|---|----------------------|-------------------|--------|
| Idea | 1   | ial                  | TO0<br>Spoi       | Rating |
| No   | Description   | Initial<br>Scree     | MD                | Rat    |
| 20.  | For service drives, use existing streets adjacent to system interchanges.       | Р                    | R                 |        |
| 21.  | In northeast quadrant of M-10 Interchange, put service drive on Antoinette      |                      |                   |        |
|      | and Holden.   | P                    | R                 |        |
| 22.  | Terminate service drives as T-intersection in interchanges.                     | F                    |                   |        |
| 23.  | In southeast quadrant of M-10 Interchange, relocate service drive to Palmer.    | F                    |                   |        |
| 24.  | Use at-grade crossings for service drives at railroads (at specific locations). | P                    | R                 |        |
| 25.  | Grade separate service drives at the railroads (at specific locations).         | P                    | PD                |        |
| 26.  | Create collector-distributor road system at interchanges, and tie service       | P                    | R                 |        |
|      | drives into the collector-distributor roads.                                    |                      |                   |        |
| 27.  | Construct single two-way service road only at M-10 and I-75 Interchanges.       | F                    |                   |        |
| 28.  | Eliminate third lane on eastbound service drive at Wayne State University.      | P                    | R                 |        |
| 29.  | Minimize green space between service drives and mainline, to minimize           |                      |                   |        |
|      | real estate, wherever possible.   | P                    | A                 | 4      |
| 30.  | Slope service roads to the outside.   | DC                   |                   |        |
| 31.  | For service drives, use two-lane cross section through intersections instead    |                      |                   |        |
|      | of three lanes at slip ramps.   | F                    |                   |        |
| 32.  | Review proposed traffic signal locations on service roads; some don't           |                      |                   |        |
|      | seem warranted.   | P                    | A                 | 9      |
| 33.  | At east end of project, design service drives for future extension.             | DC                   |                   |        |
| 34.  | Use 12 ft. median shoulders for I-94 mainline, instead of 14 ft.                | P                    | A                 | 9      |
| 35.  | Use 10 ft. median shoulders for I-94 mainline, instead of 14 ft.                | P                    | R                 |        |
| 36.  | Use four-foot-wide median barrier, constant width, to accommodate               |                      |                   |        |
|      | bridge piers, sign bridges, etc.  | P                    | A                 | 9      |
| 37.  | Use minimum width (2'-4") for the median barrier, instead of 14 ft.             |                      |                   |        |
|      | and widen for bridge piers, sign bridges, etc.                                  | P                    | A                 | 5      |
| 38.  | For I-94, do not pave the earth median where proposed, but use                  |                      |                   |        |
|      | double-faced guardrail.   | F                    |                   |        |
| 39.  | Minimize center median width to stay within the existing right of way.          | F                    |                   |        |
| 40.  | Use wider median to accommodate sight distance only (on curves).                | P                    | A                 | 4      |
| 41.  | Restrict trucks to outside lanes, to use thinner pavement on inside lanes.      | F                    |                   |        |
| 42.  | Use wider outside lane or lanes for trucks (12'-6" or 13').                     | DC                   |                   |        |
| 43.  | Pave full depth 14 ft. outside lane, use two feet for shoulder and stripe       |                      |                   |        |
|      | lane for 12 ft.   | DC                   |                   |        |

F = Fail

R = Rejected DC= Design Consideration PD= Project Design

P = Pass

A = Accepted for Study

Exhibit 7.1 Page 2 of 5

## Screening (continued)

| Crea<br>Idea      | ativity Phase Composite Summary-Speculation  | Initial<br>Screening | MDOT<br>Responses | Rating |
|-------------------|--|----------------------|-------------------|--------|
| No.               | Description  | Initial<br>Scree     | ME<br>Re          | Ra     |
| 44.<br>45.<br>46. | Use long-life European style pavement. Use hot-mixed asphalt (HMA) full depth perpetual pavement. Use continuously reinforced concrete (CRC) pavement.   | DC<br>DC<br>DC       | R                 |        |
| 47.<br>48.<br>49. | Design mainline shoulders as full pavement section.  Use inside shoulder for peak hour HOV lane.  Use reversible lanes on I-94, in addition to 4 lanes.  Use valley-gutter curb instead of concrete barrier at retaining walls.  | DC<br>F<br>F<br>P    | A                 | 9      |
| 51.<br>52.        | Set profile grade line at centerline. Set independent profiles to eliminate differential height median barrier (if PGL is away from roadway centerline).   | DC<br>DC             |                   |        |
| 53.<br>54.        | Shift I-94 centerline north between Rosa Park and Woodward.<br>At Mt. Elliott, flatten I-94 curvature, spread out ramp terminals; eliminate  | P                    | A                 | 8      |
| 55.<br>56.        | design exceptions.  Eliminate exit and entrance ramps at Chene.  | P<br>P               | A<br>R            | 3      |
| 57.               | For low volume system interchange exit ramps, construct single lane exit ramps instead of dual lane.  At I-75, construct 2-lane exit ramps for eastbound and westbound I-94 to   | P                    | A                 | 7      |
| 58.               | I-75 northbound and southbound, instead of successive exits.  Tie ramps into Woodward instead of Brush.  | P<br>P               | A<br>R            | 5      |
| 59.<br>60.        | Use collector-distributor road system between Chene and I-75. For M-10 south of I-94, do not reconstruct south of Warren, except for   | P                    | A                 | 7      |
| 61.               | removal of two ramps immediately south of Warren.  Construct single point interchanges at the following locations:   | P                    | R                 | DC     |
|                   | <ul> <li>Conner</li> <li>Gratiot</li> <li>Van Dyke</li> <li>Mt. Elliott</li> <li>Woodward (no seibly)</li> </ul>   | P<br>F<br>F<br>F     | A                 | 2      |
| 62.<br>63.<br>64. | <ul> <li>Woodward (possibly)</li> <li>For southbound I-75 movement to service drive, move exit out of interchange.</li> <li>Use split diamond interchange between Van Dyke and Gratiot.</li> <li>For Dequindre Bridge, widen north side only; for exit to Chene, use single</li> </ul> | P<br>P               | A<br>R            | 5      |
| UT.               | lane instead of two.   | P                    | A                 | 7      |

P = Pass R = Rejected F = Fail DC = Design ConsiderationA = Accepted for Study PD = Project Design

Exhibit 7.1 Page 3 of 5 7.0 EVALUATION PHASE

## Screening (continued)

| Crea<br>Idea<br>No. |  | Initial<br>Screening | MDOT<br>Responses | Rating |
|---------------------|--|----------------------|-------------------|--------|
| 65.                 | Remove Dequindre Bridge to provide only required roadway clearance,              |                      |                   |        |
| 0).                 | which helps profiles for structures if required in I-75 Interchange.             | F                    |                   |        |
| 66.                 | Eliminate Cass Street Bridge.  | F                    |                   |        |
| 67.                 | Eliminate Concord Street Bridge (or Frontenac).                                  | P                    | R                 |        |
| 68.                 | Eliminate Chene Street Bridge.   | Р                    | R                 |        |
| 69.                 | Eliminate Cadillac Street Bridge.  | Р                    | R                 |        |
| 70.                 | Eliminate Linwood Street Bridge; combine U-turn movement with                    |                      |                   |        |
|                     | Grand River Bridge.  | P                    | R                 |        |
| 71.                 | Eliminate Iroquis and Rohns pedestrian bridges, if Burns remains.                | P                    | R                 |        |
| 72.                 | Eliminate Helen Street pedestrian bridge.  | P                    | R                 |        |
| 73.                 | At Gratiot, move U-turn structure west of the bridge.                            | P                    | R                 |        |
| 74.                 | Eliminate all U-turn structures, and eliminate U-turn roadway on structures      |                      |                   |        |
|                     | that have them.  | P                    | A                 | 2      |
| 75.                 | Eliminate all pedestrian bridges, but accommodate pedestrians on                 |                      |                   |        |
|                     | roadway bridges.   | P                    | R                 |        |
| 76.                 | Use cable-stayed pedestrian bridges.   | DC                   |                   |        |
| 77.                 | For two pedestrian bridges at Wayne State University, work with the              |                      |                   |        |
|                     | University to incorporate new structures as part of context sensitive design.    | DC                   |                   |        |
| 78.                 | Eliminate pedestrian bridge over I-94 at Wayne State, but widen Trumbull         |                      |                   |        |
|                     | Bridge for sidewalks.  | P                    | R                 |        |
| 79.                 | Shorten pedestrian bridges to touch down between service drives and              |                      |                   |        |
|                     | mainline; add pedestrian crossing signal.  | P                    | A                 | 7      |
| 80.                 | Install underpasses for pedestrians.   | F                    |                   |        |
| 81.                 | Design pedestrian bridges to span service drives.                                | PD                   |                   |        |
| 82.                 | Eliminate U-turn between East Grand Boulevard and Chene; reconfigure             |                      |                   |        |
|                     | Chene intersection.  | P                    | A                 | 5      |
| 83.                 | For CN railroad bridges at west end of project, build one bridge instead of two. | P                    | A                 | 7      |
| 84.                 | Review placement of piers for bridges in I-75 and M-10 Interchanges to           |                      |                   |        |
|                     | determine if span lengths and geometry affect right of way footprint.            | DC                   |                   |        |
| 85.                 | Instead of pump stations, micro tunnel to river for drainage.                    |                      |                   |        |
|                     | A. Separate I-94 corridor storm water from city combined system.                 | DC                   |                   |        |
|                     | B. Use abandoned railroad corridor for new trunk sewer outfall to river.         | DC                   |                   |        |

P = Pass

F = Fail

R = Rejected

A = Accepted for Study

DC = Design Consideration PD = Project Design

Exhibit 7.1 Page 4 of 5

## Screening (continued)

| Crea       | ativity Phase Composite Summary-Speculation  | Initial<br>Screening | MDOT<br>Responses | _      |
|------------|--|----------------------|-------------------|--------|
| Idea       | 1  | Initial<br>Scree     | TOC<br>spo        | Rating |
| No.        | Description  | Sc                   | ™ Re              | Ra     |
| 86.<br>87. | Use retaining walls in northeast quadrant for I-75 Interchange.  | P                    | A                 | 7      |
|            | material, i.e. earth berms.  | DC                   |                   |        |
| 88.        | Close interchange ramps as necessary in opposite movement pairs (detour ramp movements to adjacent interchange).   | DC                   |                   |        |
| 89.        | Explore construction staging alternatives.  Consider capacity of contractors to be able to build segments.  For frontege roads at Descriptors Bridge build on ambankment (1 or 2 ft) | DC                   |                   |        |
| 90.        | to avoid contaminated material.  | DC                   |                   |        |
| 91.        | Provide advanced notice to contracting industry for new technologies materials and construction techniques.  | DC                   |                   |        |
|            |  |                      |                   |        |
|            |  |                      |                   |        |
|            |  |                      |                   |        |
|            |  |                      |                   |        |
|            |  |                      |                   |        |
|            |  |                      |                   |        |
|            |  |                      |                   |        |
|            |  |                      |                   |        |
|            |  |                      |                   |        |
|            |  |                      |                   |        |
|            |  |                      |                   |        |

P = Pass F = Fail A = Accepted for Study R = Rejected DC= Design Consideration PD= Project Design

Exhibit 7.1 Page 5 of 5

#### I-94 Reconstruction from I-96 to Conner Presentation of Ideas

Meeting Attendance Record March 4, 2004 - 1:00 pm

| Name             | Organization             | Phone Number         | E-Mail Address              |
|------------------|--------------------------|----------------------|-----------------------------|
| Damell Berry     | Bloom Consultants (HNTB) | 414-771-3390, Ext251 | dberryebloomcarsultants.com |
| BILL SWAGZER     | M-DOT REAL ESTATE        | (517) 373-9/79       | SWALLERNE MI. GOV           |
| Tom JAY          | MOOT REAL ESTATE         | (248)483-5168        | JAY TOMICHIGHD, GOU         |
| Sue Datta        | MDOT Meto                | 248 483 5135         | dattes @ michigan gov       |
| William Land     | MOOT Planning            | (517) 241-3677       | Landb@michigan,gov          |
| Michael D'Walky. | MINOT - Environmental    | 517, 335, 2634       | omallymo michigan, Jou      |
| WIN STEBBINS     | MDOT Design              | 517 373-2246         | stelling anichigangou       |
| Bill Carley      | CH2M HILL                | 517,347.3138 ex+22   | bearley Ech 2m. com         |
| STEVE RAPP       | MDOT - DESIGN, RR COORD. | 517-335-3043         | rapps@michigan.gov          |
| TONY KRATOFIL    | MDOT METRO REGION        | 248-483-5102         | Kratofilt emichigan gov     |
| Al Kulterthale   | benezil                  | 517 482 1682         | akaltanthale e benezit win  |
| MOHAMMEDALGHUR   | AB) MOOT                 | (517) 373-7674       | ALGHURABI MOMULIG           |
| Don Strouss      | Benesch                  | 517 482 1682         | dstraussebeneschoom GOV     |
| MUTHIAH KASI     | BENESCH                  | 312 565 OUSO         | Kasia benesch. Cam          |
| DRENDAY. PERU    | MDOT - Communica         | lus 248-483-5109     | Reek ba michiga . Am        |
| Ander Zeigler    | WIST - Metro Regen       | 24.483-510V          | Eeiglera Miohigun gar       |
|                  |                          |                      | 0 0                         |

#### I-94 Reconstruction from I-96 to Conner Presentation of Ideas

Meeting Attendance Record

| Greg Johnson            | March 4, 20<br>MDOT-METRO | 04 - 1:00 pm<br>24B 4B3-5100 | Sohnsong Ze Michigan, go    |
|-------------------------|---------------------------|------------------------------|-----------------------------|
| Name                    | Organization              | Phone Number                 | E-Mail Address              |
| Terry Horst             | HNTB                      | 414-359.2300 x2063           | thorst@hntb.com             |
| Laura Aykworth-Bonzelet | URS                       | 231-932-7592 x224            | laura_aylsworth@urscorp.com |
| KHALED SOUBRA           | UR5                       | 248.994.7447                 | khaled_Soubra@urscorp.com   |
| STEVE FLEMING           | PBQD                      | 317-972-1706                 | FLEMINGS@PBWORLD.COM        |
| PAUL SANDER             | MOOT                      | 248-483-5/53                 | SAMOERP @MICKIGAW. GOV      |
| Barb arens              | PB                        | 313-963-4651                 | arens epbwold. com          |
| Usa soconor             | PB                        | 313-148-3273                 | Silamon La planorld, com    |
| STEVE NADOLIS           | PB                        | 313 963 3272                 | NADALIS @ PBWORLD. com      |
| EO STRADA               | HNTB                      | 313-961-3330 x5758           | estrada@hntb.com            |
| Bill Stone brook        | MDOT                      | 517-373-2281                 | stonebrookbemichigan.gov    |
| BILL LAMBOIN            | HNTB                      | 313/961-3330 X 5760          | 6 LAM 6 OW @ HUTB. COM      |
| KEVIN MULLINS           | BENESCH                   | 517/482-1682                 | kmullins @ benesch.com      |
| JOHN FRIEL              | HNTB                      | 313-961-3330 x 5753          | ifrial chathicom            |
| RICH HILL               | Benusch                   | 312-565-0450                 | rhillebenesch.com           |
| PETER KINNEY            | HNTB                      | (313) 961-3330               | PKINNEY & HNTB. COM         |
| Cedric Dargin           | MOOT                      | 248.483.5172                 | dargine om strigen gov      |
| RITA D. SCREWS          | MOOT - DETROIT TSC        | 313-965-6350 EXT. 401        | screws remichigan.gov       |
| Ruth Heptor             | FHWA                      | 517/702-1833                 | noth hepter @thwa.dot.gov   |
| MY MYM000               | MOT                       | 517.313.0026                 | lynwoodl@michigen.gov       |
| Marge Laver             | PB .                      | S17-327-7895                 | laner ephonold com          |



# I-94 Rehabilitation Project (east of I-96 to Conner Avenue)

Newsletter

The I-94 Rehabilitation Project includes a limited-access transportation corridor that begins east of the I-96 interchange and ends east of Conner Avenue. This area encompasses major freeway-to-freeway interchanges with M-10 and I-75, and is adjacent to the I-96 interchange.

The I-94 Rehabilitation Project was initiated by the Michigan Department of Transportation in 1994 and is currently in the final environmental documentation phase. See pages 2 and 3 for more information on the project's background and next steps.

#### City Council and Mayor's Office Approve Recommended Alternative

#### Special point of interest:

As part of continued community outreach, Public Information Meetings will be held on October 21, 2003 at the Charles H. Wright Museum of African American History and Wayne County Community College on October 22, 2003. Members of the community are welcomed between 3:30 PM and 7:30 PM each day. See page 3 for more details.

#### Inside this issue:

| Project Background |  |
|--------------------|--|
|                    |  |

Need for the Project

History of Project Activities

Evaluation of Alternatives and Selection of a Recommended Alternative

Summary of Recommended Alternative Benefits 3

Next Steps

City Council Approves Recommended Alternative (cont.)

On August 1, 2003, the Michigan Department of Transportation (MDOT) presented its current plans for I-94 to the Detroit City Council. MDOT received unanimous votes of approval from the City Council to move forward with the project's Recommended Alternative with a joint legislative and executive "Resolution of Support". The "Resolution of Support" was officially approved by the Mayor's office on August 12, 2003 and published in the Detroit Legal News on August 14,

The Detroit Legal News article described that the City Council. in 2001, had passed a resolution with 11 changes to the Build Alternative included in the Draft Environmental Impact Statement. It reported that since 2001, "the design of the freeway has continued to evolve and your Honorable Body's comments have been taken into account. CPC (City Planning Commission) staff has attended several meetings with MDOT and its consultants and, most recently, representatives from the Mayor's office, DPW (Department of Public Works) and DDOT (Detroit Department of Transportation). The most recent iteration of the design. as described in the 'I-94 Rehabilitation Project Recommended

Alternative Analysis Final Report,' appears to substantially address the concerns raised in your previous resolution." (Detroit Legal News, 8/14/03)

The following summarizes how each of the 11 changes requested by the City Council are being addressed:

- The 55-foot reserved median space has been removed as requested.
- To address the width of continuous service drives, 2-lanes with an 8-foot shoulder will be provided. Based on 2025 traffic demand, 3-lanes on the eastbound service drive between M-10 and I-75 will be provided.
- Hendrie Street access has been redesigned to address the request for the addition of a street east of Woodward and parallel to the service drive for local traffic in order to protect the residences along Hendrie Street.
- MDOT clarified documentation of the project limits and an Environmental Assessment will not be included as part of the project.

- The project's EIS includes the Detroit Intermodal Freight Terminal Study's impact on truck traffic as requested.
- 6. In the preliminary design, MDOT has reduced spacing between the auxiliary lanes and mainline lanes as much as possible and has 'tightened' ramp geometrics in order to limit the taking of private property. Further efforts to address these concerns will be undertaken in final design.
- In response to the issue of special consideration of schools regarding noise mitigation, MDOT will address noise mitigation according to FHWA guidelines.
- 3. In response to the request of using rapid transit as a traffic construction mitigation component, through flexible TEA 21 funding in the corridor, MDOT is considering construction mitigation funding for buses. There are currently no rail alternatives to 1-94 that have been identified by SEMCOG.

(Continued on Page 4)



For More Information Contact: http://www.mdot.state.mi.us/l94rehab or (313) 963-4655

I-94 REHABILITATION PROJECT NEWSLETTER

#### City Council and Mayor's Office Approve Recommended Alternative (continued)

- Regarding the issue of correction of existing noise and air quality violations, MDOT will correct existing air and noise quality violations according to FHWA guidelines.
- 10. Regarding the issue of securing all funding for noise barriers - walls, landscaping, buffering, etc. — as well as funding for modifications of streets intersecting the service drives and on-going maintenance of the barrier walls before any highway approvals are given, MDOT clarified that memorandums of understanding will be developed between the City and MDOT describing funding share and exact mainte-

nance responsibilities.

 The railroad right-of-way east of I-75 and south of I-94 will remain as a rail corridor. Rail for the region is currently being addressed in separate studies.

As the project moves forward with the Recommended Alternative, further meetings with the City of Detroit, project stakeholders, and the public will occur as part of the project.

7.0 EVALUATION PHASE

# 7.0 | 7.4 Ideas Accepted by MDOT at Checkpoint Presentation

# **EVALUATION**

PHASE

| Idea<br>No. | Description   | Rating   | Idea<br>No. | Description                                  |
|-------------|---|----------|-------------|--|
|             | Description   | - Racing |             | 24041.ption                                  |
| 1.          | Use alternative types of retaining walls to minimize    |          |             | at retaining walls.                          |
|             | excavation:   | DC       | 53.         | Shift I-94 centerline north between Rosa     |
|             | (a) Secant pile   |          | - 4         | Woodward.                                    |
|             | (b) Tied-back steel sheeting                            |          | 54.         | At Mt. Elliott, flatten I-94 curvature, spre |
|             | (c) Helical anchor tied back                            |          |             | ramp terminals; eliminate design exception   |
|             | (d) Soldier pile and lagging                            |          | 56.         | For low volume system interchange exit ra    |
|             | (e) MSE in fill sections                                |          |             | construct single lane exit ramps instead of  |
|             | (f) Vertical face, cast-in-place concrete               |          | 57.         | At I-75, construct 2-lane exit ramps for ea  |
|             | (g) Crib walls  |          |             | and westbound I-94 to I-75 northbound        |
|             | (h) Slope paving, say 1:1                               |          |             | southbound, instead of successive exits.     |
|             |   |          | 59.         | Use collector-distributor road system betw   |
| 2.          | Use retaining walls instead of grading to save          |          |             | Chene and I-75.                              |
|             | right-of-way.   | DC       | 60.         | For M-10 south of I-94, do not reconstru     |
| 4.          | Eliminate 8 ft. shoulder on two- or three-lane          |          |             | of Warren, except for removal of two ram     |
|             | service drives, throughout project.                     | DC       |             | immediately south of Warren.                 |
| 14.         | Connect Harper to service drive west of Frontenac.      | 7        | 61.         | Construct single point interchanges at the   |
| 16.         | Use a service road "perimeter system" at the two        |          |             | following locations:                         |
|             | system interchanges.                                    | 9        |             | Conner                                       |
| 17.         | Near GM, integrate East Grand Blvd. into service drive. | 5        | 62.         | For southbound I-75 movement to service      |
| 18.         | Shift eastbound service drive alignment at Mt. Elliott  |          |             | move exit out of interchange.                |
|             | to parallel mainline.                                   | 8        | 64.         | For Dequindre Bridge, widen north side of    |
| 29.         | Minimize green space between service drives and         |          |             | exit to Chene, use single lane instead of tw |
|             | mainline, to minimize real estate, wherever possible.   | 4        | 74.         | Eliminate all U-turn structures, and elimin  |
| 32.         | Review proposed traffic signal locations on service     |          |             | U-turn roadway on structures that have th    |
|             | roads; some don't seem warranted.                       | 9        | 79.         | Shorten pedestrian bridges to touch down     |
| 34.         | Use 12 ft. median shoulders for I-94 mainline,          |          |             | service drives and mainline; add pedestria   |
|             | instead of 14 ft.                                       | 9        |             | crossing signal.                             |
| 36.         | Use 4-ftwide median barrier, constant width, to         |          | 82.         | Eliminate U-turn between East Grand Bo       |
|             | accommodate bridge piers, sign bridges, etc.            | 9        |             | and Chene; Reconfigure Chene intersecti      |
| 37.         | Use minimum width (2'-4") for the median                |          | 83.         | For CN railroad bridges at west end of pro   |
|             | barrier where proposed instead of 14 ft. and            |          |             | build one bridge instead of two.             |
|             | widen for bridge piers, sign bridges, etc.              | 5        | 86.         | Use retaining walls in northeast quadrant    |
| 40.         | Use wider median to accommodate sight distance          |          |             | interchange.                                 |
|             | only (on curves).                                       | 4        | DC          | = Design Consideration                       |
| 50.         | Use valley-gutter curb instead of concrete barrier      |          |             | = Reject                                     |
|             |   |          |             | 7 * -  |

| dea<br>No. | Description  | Rating |
|------------|--|--------|
|            | at retaining walls.                                    | 9      |
| 53.        | Shift I-94 centerline north between Rosa Park and      |        |
|            | Woodward.  | 8      |
| 54.        | At Mt. Elliott, flatten I-94 curvature, spread out     |        |
|            | ramp terminals; eliminate design exceptions.           | 3      |
| 56.        | For low volume system interchange exit ramps,          |        |
|            | construct single lane exit ramps instead of dual lane. | 7      |
| 57.        | At I-75, construct 2-lane exit ramps for eastbound     |        |
|            | and westbound I-94 to I-75 northbound and              |        |
|            | southbound, instead of successive exits.               | 5      |
| 59.        | Use collector-distributor road system between          |        |
|            | Chene and I-75.  | 7      |
| 50.        | For M-10 south of I-94, do not reconstruct south       |        |
|            | of Warren, except for removal of two ramps             |        |
|            | immediately south of Warren.                           | DC     |
| 61.        | Construct single point interchanges at the             |        |
|            | following locations:                                   |        |
|            | Conner   | 2      |
| 62.        | For southbound I-75 movement to service drive,         |        |
|            | move exit out of interchange.                          | 5      |
| 64.        | For Dequindre Bridge, widen north side only; for       |        |
|            | exit to Chene, use single lane instead of two.         | 7      |
| 74.        | Eliminate all U-turn structures, and eliminate         |        |
|            | U-turn roadway on structures that have them.           | 2      |
| 79.        | Shorten pedestrian bridges to touch down between       |        |
|            | service drives and mainline; add pedestrian            |        |
|            | crossing signal.                                       | 7      |
| 82.        | Eliminate U-turn between East Grand Boulevard          |        |
|            | and Chene; Reconfigure Chene intersection.             | 5      |
| 83.        | For CN railroad bridges at west end of project,        |        |
|            | build one bridge instead of two.                       | 7      |
| 36.        | Use retaining walls in northeast quadrant for I-75     |        |
|            | interchange.   | 7      |

#### **MEETING MINUTES**

**Date of Meeting:** March 4, 2004

**Time of Meeting:** 1:00 p.m. to 3:15 p.m. **Meeting Location:** Marriott Courtyard - Detroit

Subject: I-94 EPE Reconstruction I-96 to Conner Avenue

**Value Engineering Study** 

Check Point Review of Ideas - Session 1

**Participants:** An attendance roster is attached.

**Agenda:** An Agenda is attached.

This meeting was held for the VE team to present initial ideas from Session 1 to MDOT staff, and for MDOT staff to give comments on those ideas. The meeting was considered as a check point review. Following are notes from the meeting:

- Win Stebbins: Introduction.
- Kasi: PowerPoint presentation
  - Review of VE Process
  - Review of Cost Estimate
- Kasi requested that answers/clarification on estimates be provided next week.
- One third of cost is service drive and cross structures.
- Darrell covered 21 questions regarding cost estimate.
- Kasi covered Function Cost Components.
- Kasi reviewed how to look at value vs. mismatch.
- Darrell talked about the VE process
  - Needs/Desires/Constraints
  - o Owners/Users/Stakeholders
  - Speculation, two teams developed and then came together to combine ideas into one list.
- Laura presented ideas 1-33, service drives.
- Terry presented ideas 34-63, mainline.
- Al presented ideas 64-84, bridges
- Marge presented ideas 85-91, drainage/construction staging.
- Darrell gave a summary of our work thus far.
- Darrell reviewed how project cost was developed
- Kasi gave examples
  - o Contingency: What is included? Earthwork?
  - Enhancement: What is included? How is it broken down between mainline and service drives?

- Darrell –cost estimate was done in 2001 and updated with factors to 2002 dollars. Cost estimate has not been updated to 2004 dollars.
  - VE Estimate Structures \$420 million. DEIS estimated cost is \$161 million. When all the various factors from the original cost estimate are combined, the multiplier on construction cost becomes 2.63.
  - Suggest using a factor of 1.50 on construction costs for bridges, and also for retaining walls.
    - Multiplier would be based on:
      - Mobilization Costs
      - ♦ Maintenance of Traffic
      - ♦ Construction Engineering Costs
      - ♦ Design Engineering Costs
      - ◆ Contingencies
- Win Stebbins
  - Gave the VE team some parameters (11 items) that were not known to the I-94 VE team when developing the list of VE Ideas. The information given was an October 2003 Newsletter. The VE team listed MDOT's comments on each of the ideas presented (see following pages).

Mohammed stated that he expects the VE team to validate the project right-of-way footprint, so that there is no delay in the environmental process. If elements of the proposed design cannot be validated, reasons need to be given.

Notes: The 6' median width has no justification. Planning tool variable

Railroad bridges should be in cost model. South Lodge work is not part of cost estimate

Elimination of Brush Street ramps may be a City Issue.

VE team to identify drainage issues and cost.

The above constitutes my understanding of the issues discussed and the conclusions reached.

Respectfully submitted, Douglass Strauss Project Manager

## 7.0 EVALUATION

# PHASE

List of the Ideas and MDOT's Comments on the Ideas: (Refer to Section 6.0 for a listing of the ideas)

- 1. OK
- 2. OK
- OK maintenance is an issue with MDOT. Getting to these grass areas for mowing. Identify slope 1:3 or 1:4 and material.
- 4. Rejected City wanted flexibility. Wanted 12' shoulder for future changes
- 5. Failed by VE team; additional information indicated that this is the current design.
- 6. Rejected per commitment to City
- 7. Rejected Has to be continuous service drive per commitment with City/public
- 8. Failed by VE team
- 9. Rejected Need 30' per City functionality free flow transit non-motorist traffic.
- 10. Rejected Commitments to public. Must have continuous service drive.
- 11. Rejected Commitments to public. Must have continuous service drive.
- 12. Failed by VE team.
- 13. Rejected Commitments to public. Must have continuous service drive.
- 14. OK Right in/Right out only
- 15. Rejected Commitments to public. Must have continuous service drive.
- 16. Accepted Project had it at one time but PB was told it was too costly.
- 17. Accepted GM needs separate service drive. Keep access points for GM to/ from I-94
- 18. Accepted
- 19. Rejected Must have continuous service drive.
- 20. Rejected Must have continuous service drive (similar to Idea #7).
- 21. Rejected Must have continuous service drive.
- 22. Failed by VE team
- 23. Failed by VE team
- 24. Rejected Service drives are all being grade separated. Follow mainline. FHWA wants separated.
- 25. Current design
- 26. Rejected PB already studied this along with braded ramps and service drive chosen
- 27. Failed by VE team
- 28. Rejected Agreement reasons with Wayne State University
- 29. Accepted limit areas if cantilever. Enhance extra areas. Must have a specific
  - benefit on other side of service drive.
- 30. Design Consideration
- 31. Failed by VE team
- 32. Accepted
- 33. Design Consideration

- 34. Accepted MDOT and FHWA want to see cost implications
- 35. Rejected
- 36. Accepted can study-prepare cost
- 37. Accepted can study-prepare cost
- 38. Failed by VE team
- 39. Failed by VE team
- 40. Accepted Stay within footprint
- 41. Failed by VE team
- 42. Design Consideration
- 43. Design Consideration
- 44. Design Consideration
- 45. Design Consideration
- 46. Rejected No CRC pavement per MDOT
- 47. Design Consideration
- 48. Failed by VE team
- 49. Failed by VE team
- 50. Accepted
- 51. Design Consideration
- 52. Design Consideration
- 53. Accepted stay within footprint
- 54. Accepted Failed by VE team after meeting, goes outside footprint
- 55. Rejected Per GM agreement
- 56. Accepted
- 57. Accepted First one takes off first due to profile.
- 58. Rejected Tight spacing. Moved to Brush because of ramp spacing from M-10 ramps. Maintain existing access patterns.
- 59. Accepted, although already studied by PB
- 60. Rejected Changed to Design Consideration by VE team. It is because needed to extend ramp to avoid design exceptions. Part of Access Justification Report (AJR)
- 61. Accepted If stays in footprint, also look at Gratiot.
- 62. Accepted If ramp spacing is met
- 63. Rejected
- 64. Accepted stay in footprint. Current design is to widen to north.
- 65. Failed by VE team
- 66. Failed by VE team
- 67. Rejected If it eliminates pedestrian need to describe where pedestrians will go. Who is benefiting, plus commitment to City to put back as many as possible.
- 68. Rejected If it eliminates pedestrian need to describe where pedestrians will go. Who is benefiting, plus commitment to City to put back as many as possible.
- 69. benefiting plus commitment to City to put back as many as possible.
- 70. Rejected For transit use
- 71. Rejected For transit use

- 72. Rejected Pedestrian bridge must remain
- 73. Rejected Need strong case. Transit is an issue
- 74. Accepted
- 75. Rejected pedestrian bridges must remain
- 76. Design Consideration
- 77. Design Consideration
- 78. Rejected This is the proposed design. Brooklyn & Canfield pedestrian bridges are the only ones to be out.
- 79. Accepted City concerned about pedestrian traffic
- 80. Failed by VE team
- 81. Current design
- 82. Accepted Maintain movements to GM
- 83. Accepted VE team to prepare cost comparison
- 84. Design Consideration
- 85. Design Consideration.
  - a. Design Consideration
  - b. Design Consideration
- 86. Accepted
- 87. Design Consideration
- 88. Design Consideration
- 89. Design Consideration
- 90. Design Consideration
- 91. Design Consideration